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FEATURE MATERIAL

The Delaware, based at Gloucester, Mass., is an exploratory fishing vessel operated by the Bureau of Commercial Fisheries, Fish and Wildlife Service. The cruise, which began April 19 and was completed June 10, was under the auspices of the Bureau of Commercial Fisheries, the Woods Hole (Mass.) Oceanographic Institution, and the National Geographic Society.

Exploratory fishing and oceanographic observations were conducted from the Delaware at various places in the Atlantic Ocean from Gloucester to a point south-east of the Azores. Tuna were caught during the cruise with Japanese-type longline gear and trolling lines. Special midwater trawls were used for catching smaller fishes. Plankton nets and midwater trawls were used to collect eggs and larval fishes; a wide array of instruments was used in gathering oceanographic data. The results of the cruises are now being evaluated.

It was during the homewardbound voyage of the Delaware that the programs of this vessel were coordinated with those of the Geronimo, also a Bureau vessel. The Geronimo left its home port of Washington, D. C., May 7 for a 30-day cruise in the Gulf Stream and the northwestern Atlantic to test oceanographic and biological gear, to provide oceanographic and some biological data to the Delaware, and to study the "scattering layers," those layers of heavy concentration of small fish and other biological life near the surface of waters bordering on the Gulf Stream.

The scientists aboard the Geronimo kept those on the Delaware informed on the location of the boundaries of the Gulf Stream. The Gulf Stream, while flowing in a generally northeasterly direction, varies considerably in width and location, sometimes shifting several miles a day. The western, or inshore, edge of the Gulf Stream is characterized by a sudden change in water temperature, which was much as 25 degrees in less than one mile on this particular cruise, although even more marked changes are common.

Three transects of the Gulf Stream were made from the Geronimo--one east of Hatteras where the Stream was 57 miles wide; another south of Connecticut, where the Stream had narrowed to 35 miles, and the third south of Cape Cod, where it had widened to 102 miles. In addition to its task of locating the boundaries of the Gulf Stream, fishing gear and oceanographic instruments on the Geronimo were tested and numerous oceanographic observations were made.

Additional research will be needed to determine the extent and the possible value as tuna food of the concentrations of small fish and other organisms found in the scattering layer; also, the effect on the tuna and other marine life of the warm water pools which are often cut off from the main warm current of the Gulf Stream. These pools exist as "islands" of warm water, each rather quickly dissipated by mixing with the colder inshore waters.

The Geronimo is now in Washington, D. C., where it is being prepared for its part of the work in "Equalant II." It will leave in July for waters off West Africa, the scene of operations during the International Cooperative Investigations of the Tropical Atlantic. The Delaware is in port at Gloucester, preparing for other exploratory fishing cruises in the northwest Atlantic.

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